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THE
VIRGIN'S
BOWER



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THE VIRGIN'S BOWER

BY WILLIAM ROBINSON

It was intended to publish this book in 1912, but owing to an unavoidable cause of delay, it could not appear till 1913.

THE VIRGIN'S BOWER

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CLEMATIS

CLIMBING KINDS AND THEIR
CULTURE AT GRAVETYE MANOR

By W. ROBINSON

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"ENGLISH FLOWER GARDEN"

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PREFACE

I HAVE had so much pleasure from the cultivation of these lovely plants that I venture to print a little book on the subject, as one sees even large gardens desolate so far as they are concerned.

In treating of them I go a little away from what is usual in such a matter, by avoiding the technicalities with which so many garden books are burdened. This is a garden book, and therefore the use of confusing terms, as serving no good end, is left out.

Garden books have been lavish in Latin terms and doubtful classifications, but they have not altered the fact that neither in public nor in private gardens of Europe are these plants ever seen in a healthy state.

I open one nursery catalogue in which the Clematises are divided into thirteen groups, each with an awkward Latin name, and some of these divisions are of doubtful value. Needless hairsplitting is one of the evils of the pretended science of the day, and in this case of our gardens certainly serves no good purpose. Therefore I treat the family in alphabetical order as the simplest way, and one there can be no garden objection to.

The stock of bad Latin which we owe to botanists leads some people to cut capers with that language with fearful results—the terms which issuing from the mouths of botanists are bad enough, when descending into those of gardeners are grotesque indeed. In botany these technical terms may be essential, but gardening is quite a different affair, and for ages the effect of botanical classifications on the garden has not been a happy one. Nor are they necessary; the names in our own tongue are as good as any, and we are not prevented from adding the Latin name when necessary.

A garden is of all things in the world the place to select. In botany all plants are of equal value; but in gardens we must choose or suffer. If we go in for all kinds, good or bad, we end in a museum or a botanical garden; but that rarely gives us beauty. Therefore I omit all graceless kinds, and those that do not climb.

THE VIRGIN'S BOWER

Clematis.

THE Clematises are the most graceful of the flowers that garland the northern earth and the garden if we will allow them ; but beautiful as they are and many as they are, and gracefully varied, they are rarely well seen in gardens, owing to disease or some fatality. Always impressed by their beauty, and, not content with being beaten, I tried to get out of their troubles in various ways, and succeeded so far that last year we gathered something like thirty kinds of wild and cultivated species in one day.

What causes the Clematis loss? is the question all over Europe, both in nurseries and private gardens. I was led to think it was grafting that was the main reason, and, secondly, over-exposure to the sun ; and, again, the fragility of the stems, which the slightest want of care may injure—even the movement of the wind will sometimes do it. All the large kinds are grafted ; but if we look at the simpler kinds we find they suffer far less, and these are raised in natural ways, *i.e.* by division,

layers, or seeds. Such are the Indian Mountain Clematis, the European Virgin's Bower, the Scarlet Clematis, and the fragrant autumn *Clematis flammula*. In these we rarely see any signs of disease, but, on the contrary, great vigour. Even if a kind will take well on a stock when we graft a Japanese species on a European strong kind, there may be a difference in the season of flow of sap, which may cause death. I once wrote to a man who advertised Clematises and asked him what his collection was grafted on, and he replied, "On the common native kind." This is really a forest climber, and most unfitted for putting fragile kinds from any country upon. Grafting on *C. viticella*, a European kind, is safer, and on this stock the plants often root after being grafted. But there is no need for grafting in any case, because the plants can be easily propagated by layers or by seeds, the first way being the best. Another cause is over-exposure to the sun. I grow mine in open places, on trellis and Oak or Chestnut tripods, and sometimes, seeing the shoots stricken in that position, I put the plants in a gentle shade. Lastly, there is the fragility of the stem, which in some varieties is much marked, so that any want of care in hoeing, weeding, or otherwise handling them, may lead to trouble.

The remedy for grafting is to go back to layers for all the choicer kinds, and it is by far the best way. A veteran French nurseryman, M. Jamin, told me he never regretted anything more than



PHOTOGRAPHED BY A. S. B. B. B.

ON A WILD PEAR TREE

giving up his layering ground. That plan was adopted, no doubt, for the sake of the too facile grafting on cheap stock that came in the way. He is one who still layers, and from him I got some of my good plants, and every grower of hardy plants should adopt the same system. In addition to growing the plants in the ordinary way on wall, trellis, or Oak fence, I have tried various experiments, planting the Clematis in the shade of some low tree, and in this way I have had some striking successes. Among these were *Perle d'Azur*, a beautiful kind, on a wild Plum tree, on which it trained itself and held up its beautiful blooms all over the tree after the Plum had gone out of flower. The well known *montana* kind I put on Oak trees, the beautiful *crispa* planted with the Bay tree, and the common *viticella* in hedgerows from seed, over which it comes up every year and throws a veil of beauty. The first striking success was with the white Virgin's Bower over a flowering Cherry tree. After the Cherry bloom came all through the tree the white flowers of this good, free kind. It was a charm for years, until the need of improving a view led to the removal of the tree.

Planting with shrubs and low trees.—Once some kinds came in, and, not knowing where to put them, I chanced to plant them under the Magnolias some years ago and forgot all about them until a few weeks ago, when I found a superb plant of *Nellie Moser* climbing up a summer leafing Magnolia and forming a beautiful picture. There

is a certain amount of risk and chance, I know, in such a practice, as sometimes the tree may overcome the slender climber, but it is just as well to now and then forget. If we look at Clematises growing wild, we find that they are thicket or wood plants and accustomed to some degree of shade, the greater part of the foliage being in shade. Few of us have had the pleasure of seeing the great flowered kinds of Japan in a wild state ; but from all we know of the European kinds which grow round the basin of the Mediterranean, they are essentially copse plants, and this suggested to me the wisdom of planting them among other things, always, if possible, on their own roots. One cannot easily get them in that way ; but when a lot arrive from the trade grafted on *viticella*, we wash out the roots clean, and then are seen two "rings" of rootlets, one clear above the other, the first being the effort of the plant to free itself, the other, the lower one, the stock on which it is grafted. We cut the lower one clean off, and let the desired plant have its way on its own root.

The idea that we injure a tree by placing on it a more fragile one is wrong and against all Nature's ways. We must, of course, know the plants that go well together, or we fail. A fragile climber put upon a Pine tree does not injure it. I have many strong Vines put on Apple trees, and people say, "What about the Apple?" That always reminds me of a saying of John Ruskin,

the only time I had the pleasure of talking to him, when it was a question of the beauty of the orchard in spring or fall, and he said, "Give me the flower and save me the stomachache." What would our woodland be without the Ivies, the Honeysuckle, and other climbers? As to position, all seem to suit—north as well as south sides of walls, posts and rails, erect trellises, in the flower-tripods, and on the pergola, while those planted beneath trees have much more shade.

Soil.—There has been much writing about soils and composts in writings on the Clematis. Here we had little choice; no peat in the place or near. We planted in the ordinary stiff loam of the land, adding sand to lighten it: also because the plants are sand lovers. Doubtless a fine compost of peat loam, etc., might help, but we trusted the soil of the place, believing too that more depends on getting good healthy plants and placing them than in seeking any virtue in special composts. The free kinds that grow in the fences and over trees were planted in the same way in the ordinary soil of the place, often not so deep or well prepared as for the choicer kinds in the garden.

Clematises have a value for the house and table; some kinds keep well in rooms, especially if a piece of the woody branch is cut with the flowers. As some of the kinds are quite free and vigorous growers, there is usually plenty for cutting. The smaller forms cut in this way may

be used for the decoration of mantelpieces and other surfaces, hanging down in a peculiarly graceful way. All the woody climbers are of use in this way, and even the large kinds, which may be cut without much wood attached, keep in glasses for days.

Apart from the divinest colour of all the flowers that rejoice in our Northern air, infinite loveliness of form in bloom, branch, and tendril, there is the precious quality of a long season of bloom, which should endear them to all. Many well-loved flowers pass away like the clouds. Lilac time is too short; but there is no such sharp limit to the days of the Virgin's Bower. The kinds that throw a veil over the thickets around the great sea bloom in our Southern and mild coastlands in winter. Last Christmas they clambered over the garden wall with many creamy blossoms. In April the Alpine Virgin's Bower came with its welcome grace among the otherwise bare sticks of the wall climbers, and so on through the summer follows the lovely race, until Madame Baron-Veillard faces the wild storms of the fall with its delicately coloured flowers.

THE VIRGIN'S BOWER

THE ALPINE VIRGIN'S BOWER

Clematis alpina.

A HARDY early and often neglected kind, growing at an elevation of 2000 feet to 4000 feet. The stems, which at first are stained red, are 3 feet to 6 feet high. The flowers are a delicate blue. It is most likely to succeed when planted in a northern situation in peaty soil, but will also grow in loam.

Atragene austriaca.

A form allied to the preceding, differing from it in the bell shaped flowers, which are larger and more pendent. The stems, with their numerous offshoots, are not so high, and the leaves shorter and more regularly indented. The petals are of unequal size, and resemble a semi-double flower as they increase in size. The flowers are a violet blue of a deeper shade than in *alpina*; good for low terrace walls, trellises, or the bolder rocks in the rock garden.

A lover of rocks and rocky places, this is most

welcome to the bold rock-gardener, and it also invites us to plant it with or very near a slow-growing Holly or other not too vigorous shrub, on which it may train itself. It should not be planted near very vigorous climbers or in deep shade caused by such climbers. I lost a number of plants from that cause. Not now common in nurseries, it should be layered and also raised from seed. It is a kind of vast distribution in the northern world, and there are Siberian and other forms which we should know more of.

The flowers are a cheery sight in spring, coming with an alpine air to tell us of the lovely kinds that come with summer days.

THE BALEARIC VIRGIN'S BOWER

C. calycina.

A plant often confused with *C. cirrhosa* though distinct and wild in the Balearic Isles. An evergreen, this is hardy in the warmer parts of Britain and Ireland, flowering at midwinter in sheltered places where its long dark brown stems can be trained against a sunny balustrade or wall. It is worth growing if only for its finely cut leaves, of a pretty bronze colour in winter, and useful for cutting. The bell like flowers open from December to March, and are creamy white freckled with reddish purple on the inside, and fragrant.

This is a plant of easy culture in ordinary free soil and may be allowed to travel freely over shrubs ; good also for terrace walls and warm banks, to aid its welcome winter and early spring bloom. It is hardy in our islands and quite free in growth and bloom, especially in gardens near the sea.

THE HAIRBELL VIRGIN'S BOWER

C. campaniflora.

A plant of graceful and free growth from Portugal, with stems of 6 to 10 feet and leaves cut into a score or more of leaflets. The flowers come on long twining stalks from June, and though only about an inch across, the number of pale purple bells makes this an elegant climber. I love this fragile kind, which grows freely here. A blue form I have failed hitherto to get, and have seen it once only in Mr Wilson's garden at Weybridge. It grows freely on arches and trellises. Also if set among Azaleas or other shrubs it will throw graceful wreaths about their crests, and will even run over Hollies. At first it was not easy to get, so I had not a chance of trying it in hedgerows. I have little doubt it would do well in them. It is such a free grower, its seed must be easy to gather, and to raise it in that way may give rise to some pretty variations.

THE EVERGREEN VIRGIN'S BOWER

C. cirrhosa.

A robust evergreen climber with strong rope-like stems which cover tall trees in its own country—the shores of the Mediterranean. With us it is less vigorous though hardier than *calycina*, with flowers less pretty and later in coming, and glossy green leaves which are broader and not cut at all, or simply divided in threes. The little drooping bells of white or greenish yellow, covered with glossy down on the outside, are pretty, especially while in bud, the pale green pendants looking like little silken nuts. This grows freely on walls in the south and mild districts, and quite freely near the sea, running over bushes if allowed. Syn. *C. balearica*.

THE NOBLE VIRGIN'S BOWER

C. lanuginosa.

This is the best of the large flowered kinds and of high value. It was sent to us by Robert Fortune. It flourishes in the north of China on the Chekiang Mountains, near Ningpo, on the hillsides, in light and rocky soil, where its large handsome blue starlike flowers may be seen upon



PHOTOGRAPHED BY A. G. GENEVE

ON ARCH AND TRELLIS

the tops of the bushes. The vigorous stems scarcely attain a greater height than 6 to 8 feet. The flowers are very large and in shape oval, terminating in a point; they are woolly, especially on the under side. It begins to bloom in June and July, and its flowers continue throughout summer and autumn. These are very large, 6 inches to 8 inches in diameter sometimes, of a pearly grey blue or lilac colour, and starshaped.

There are several varieties of this handsome kind, which has also been a source of some of the numerous hybrids, few of which, so far, are well grown in our openair gardens, of which they might be some of the most beautiful ornaments.

THE SCARLET VIRGIN'S BOWER

C. coccinea. ✓

This distinct and beautiful kind is of easy culture, flowering long and very gracefully, the foliage good in form and colour. The leaves and stems are a pretty glaucous green and the coral red urnshaped flowers appear in succession as the stems lengthen. Owing to their fleshy nature the flowers last a good while and are very beautiful in a good form, but dingy forms occur.

To me this always seemed one of the most graceful kinds. It grows freely on walls and trellises, and when plentiful may well be planted with shrubs to gain pretty effects in training itself.

It is very well suited for terrace balustrades. We never trouble about pruning beyond cutting away dead wood, if any. Easily raised from seed, it should not be a martyr to the art of grafting. It grows well in the ordinary soil, rather deep and free. A native of the Southern and United States. Syn. *C. texensis*.

THE CRISPED VIRGIN'S BOWER

C. crispa.

A great favourite of mine from eastern North America, rising 4 to 8 feet with limp evergreen leaves and fragrant bellshaped flowers of purple, lilac or nearly white. It is one of the most difficult kinds to distinguish, embracing forms differing as to shape and size of leaf and flowers. The flowers appear in June and last till autumn, and are very variable, some forms being bright and pretty. This grows well on arches, trellises, and sometimes planted in a shrub like the Sweet Bay or a Holly. Planted with shrubs it grows taller with me than when grown alone.

FRAGRANT VIRGIN'S BOWER

C. flammula.

The sweet smelling Clematis of our gardens, which in autumn fills the air with the scent of vanilla. It completely covers the arbour and

mounts to a certain height, where it forms a compact bush covered with flowers. It is the wild Clematis of the Mediterranean region, and its cultivation dates from 1596. It has several varieties. One with the flowers red outside (*C. F. rubella*), the other with the pedicels more slender and free, which gives to the bush a softer and more delicate aspect. Lastly, there is a third and more vigorous variety with larger and firmer leaves and flowers, which bears the name of *C. F. robusta*. Easily grown over walls, orchard trees, bush or brake. A kind that should never be omitted in the garden where picturesque effects from hardy plants are sought. S. Europe.

SIEBOLD'S VIRGIN'S BOWER

C. florida.

The bicoloured Clematis of Siebold, as it is called, is a distinct and interesting variety. Its first introduction was in 1829, along with *C. azurea*, to the Botanic Garden at Ghent; but until 1836-38 it was not much known in French gardens. In foliage and habit *C. florida* resembles no other species, the essential difference being in the flower, which is double and bicoloured. Encircled by a white collaret of large sepals, the centre forms a corona of little violet petals, which impart to the flower a certain resemblance to the Passion Flower. These petals are stamens in process of transforma-

tion into brown coloured exterior anthers; the interior ones continue with the pistils after the fall of the bloom.

I have only seen this kind well grown in Miss Willmott's garden at Warley, who writes :—

“One peculiarity of *C. Sieboldi* is that about a third of the flowers are absolutely quite double. There is the outer circle of bracts filled in with a coronalike centre. I believe my plant is the only one in cultivation in England. I counted 500 flowers and seemed only to have made some way in reckoning up the total.”

INDIAN VIRGIN'S BOWER

C. grata.

A free much branched Indian climber, growing from 12 to 15 feet high, with hairy stems and leaves, flowering freely with me on pergola or over bushes. I heard that it is a hybrid, but have no evidence of this. In any case, it is a very good kind, flowering when few climbers are in bloom.

THE JAPAN VIRGIN'S BOWER

C. jackmannii.

This plant is said by Mons. Lavallée to be a Japanese species and not a hybrid as supposed. It is, in fact, to the botanists, who have collected in Japan a well known plant. It is a free and

vigorous kind and of easy culture. The flowers are from 5 to 6 inches across, and consist of from four to six rounded sepals, which have a ribbed bar down the centre; they are of an intense violet purple remarkable for its velvety richness, and a shading of reddish purple towards the base. There are several varieties of this source, usually valuable garden plants for banks, bold rocks, covering low trees and stumps.

THE INDIAN MOUNTAIN CLEMATIS

C. montana.

The mountain or Anemone flowered Clematis is a native of Indian mountains. It mounts to a great height on trees, and for this reason may be used with advantage and with charming effect in parks and large gardens.

The flowers last well when cut, particularly those springing from the short side spurs, which outlast those upon longer footstalks. Useful for walls, orchard trees, and tall trees. Here grown on the Oak and Yew.

The Rosy Virgin's Bower is a recent and very pretty form from China, usually classed as a variety of *C. montana*, but I think distinct, finer in habit and less rampant. A friend who grows it in North Germany tells me it is hardier there than *montana*. It is excellent for various garlands over walls, light arches, and over low trees and shrubs. It is of easy culture in ordinary soil.

THE NODDING VIRGIN'S BOWER

C. nutans.

After coming, as I thought, to the end of my enjoyment of these plants, in 1912 I find in the middle of October pretty flowers of the nodding Clematis. This graceful and distinct kind is now in abundant flower and bud. We have it in several positions, and it seems to grow well in all. It is of a peculiar yellow green colour, and the leaf is quite graceful. It is a Chinese kind, fragrant, of good growth, and a real addition. Some of the smaller kinds of Clematis are scarcely worth cultivation; but this may well be, it carries the blooming season so much further on in the year.

YELLOW VIRGIN'S BOWER

C. orientalis.

A plant climbing freely from 12 to 20 feet, with grey green foliage cut into rounded leaflets of glossy texture and fragrant pale yellow flowers in autumn. They are $1\frac{1}{2}$ to 2 inches across, carried freely on slender stems, and in fine seasons continue very late, especially in places near the sea. Their colour varies from a dull yellow green to clear pale yellow, for, covering a vast range in Asia, it occurs in several forms. The pretty fragrant flowers are

followed by silky seeds with long silvery tails, useful for mixing with autumn flowers. Grows freely over Hollies and other shrubs or low trees. I have tried it on fences and in various rough positions out of the garden proper. It is not so effective for effect in the garden as other kinds, but has uses for the picturesque garden. Easily raised from seed, and, therefore, there is no need for grafting it.

THE RUSSIAN VIRGIN'S BOWER

C. tangutica.

A noble kind of rather recent coming, often wrongly described as a variety of *C. orientalis*. It is quite a distinct and finer plant. The error has been fostered by botanists, who do not often see the plants alive, and "argue" from the dried plants. It grows freely here in our ordinary soil, deep and moist, but no trellis is large enough for it. The large, deep yellow flowers are followed by handsome seed heads. As yet we do not know its value up trees or falling over rocky slopes, but we should try it in bold ways.

THE TRAVELLER'S JOY

C. vitalba.

A native climber and the most vigorous of them all, especially on chalky soils. Old plants with

ropelike stems will cover tall trees for hundreds of square yards if allowed to trail freely in woodland. For the wood few things are finer in effect, but too vigorous for garden culture. Used by some growers as a stock, for which it is unfitted.

VIRGIN'S BOWER OF THE SOUTH OF EUROPE

C. viticella.

Of rapid growth and free in its bloom of various colours, this plant, improved by cultivation and crossed with other kinds, has given us some of the best garden Clematis. The flowers, 1 to 2 inches across, are sweet and come through a long season, in colour blue, purple, or rosy purple with yellow stamens. Many charming garden varieties exist, of which the best are *alba*, a white form somewhat more vigorous, growing well over low trees; *kermesinus* has bright wine red flowers, and *lilacina* grey lilac with darker veins. The white and rosy forms are very effective planted together. This kind comes as free from seed as furze, and with us sows itself in hedgerows, where it comes in wreaths long after the May and Dog roses.

HYBRIDS AND VARIETIES

Apart from the more beautiful of the wild kinds, we possess a world of beauty among these, often hidden from our eyes owing to fools' work in grafting.

These we may look forward to the increase of year by year, and the catalogues will always print the names of many, marred here and there with synonyms and rebaptisings, but in the main telling us of many lovely things. The essential point is their successful culture.

Avoid all kinds of this fine hybrid race—in origin mostly of Chinese or Japanese origin—grafted on our wild forest climber (*C. vitalba*). Without going into hyperscientific refinements, it should be clear to common sense that grafting such plants on one of the most rampant of European climbers is a very doubtful practice. Apart from the very different natures of the two, there is the effect of climate; the same if our hardy wild climber would move under a slight rise of our northern spring that would fail to affect those from a quite different clime. It always struck me that this difference in the flow of sap and clime was enough to account for the deaths which were so frequent. Plants which are grafted on *viticella* are not in such a dangerous case, and root more readily; but there is no reason at all for grafting if nursery-

men would only go back to the old and tried system of layering. The beauty of these plants is worth any amount of taking trouble to secure. *La France*, *Perle d'azur*, and many others—the beauty of these cannot be described in words. No orchids or other flowers seen at the most famous flower shows can equal them for beauty of colour. The coming of the Scarlet Clematis has helped to give rise to another series of hybrids whose beauty, though great, does not, I think, quite equal that of the open forms. We must depend on the nursery trade as regards the future of these plants; and spirited men should go back again to the old layering ground, instead of looking round the world for cheap wild stocks.

DOUBLE VARIETIES

I never plant one if I know it. The wondrous grace of buds and flowers are lost by doubling. And as to colour, by turning the flower into a mop we lose the divinest colour of all the flowers happy in our northern air. And in the open garden where these flower happily thrive, double flowers cannot face, as the natural forms do, the storms of wind and rain. Among their charms to me is the fine way they look at us after the wildest
ales and well into the autumn. Sometimes if a double kind comes in by mistake, I get it on the fire soon. Unhappily, among the raisers of flowers



the love of the bizarre is greater than the love of beauty, and therefore among these fairest of garden flowers one has to be on guard against doubtful additions. Those who grow the plants in glass-houses may see some value in the double forms, where they have not to face the weather.

Some of the more Beautiful Hybrids.

Kinds may be expected to vary in different lists, and from time to time as new sorts are raised, but the following may be trusted to give lovely effects if culture and position be all they deserve :—

| | |
|------------------------------|----------------------|
| <i>La France.</i> | Madame Ed'André. |
| <i>Belle Nantaise.</i> | „ Grange. |
| <i>Perle a'Azur.</i> | „ Van Houtte. |
| <i>Admiration.</i> | Marcel Moser. |
| Blue gem. | Marie Boisselet. |
| <i>Comtesse de Bouchaud.</i> | Miss Crawshay. |
| <i>Countess of Lovelace.</i> | Mrs Cholmondeley. |
| Duchess of Albany. | Mrs Hope. |
| Edward Desfossé. | Nellie Moser. |
| Fairy Queen. | Otto Froebel. |
| Gipsy Queen. | Purpurea elegans. |
| Grande Duchesse. | Queen Alexandra. |
| Guiding Star. | Sir Garnet Wolseley. |
| Henryi. | Star of India. |
| Jackmannii superba. | Thomas Moore. |
| Jeanne D'Arc. | Tunbridgensis. |
| Lady Caroline Neville. | Ville de Lyon. |
| Lady Northcliffe. | William Kennett. |
| Lawsoniana. | |

DISEASES AND REMEDIES

As regards disease in connection with these plants, my experience is much like that of the man who wrote the chapter on snakes in Ireland. I never bother much about them, and I can honestly say that I have never suffered much from disease. Very likely some minute creatures may have had something to do with the disappearance of branches occasionally, but, on the whole, Clematises suffer less than most plants from insect enemies. It is very probable that, like other things, they are most liable to these attacks when in ill health from other causes ; but, given plants on their own roots and in congenial soil and situation, sickness is not often apparent. However, as others may be troubled by these various enemies, I give the following from *Les Clématites*, by M.M. Boucher and Mottet :—
“There are various kinds of lice that attack the Clematises. The plants, however, are easily freed from these by means of spraying with nicotine at the rate of $\frac{3}{4}$ pint of nicotine to $1\frac{3}{4}$ pint water. This should be sprayed on in the evening only, after the sun’s heat has subsided, and the following morning the plants should be washed with clean, fresh water.

“EEL-WORMS.—This is a rather vague term to indicate those microscopically small worms which

live at the plants' expense in boring into the roots, where they form numerous colonies. Their bites result in the forming of cysts or galls. Their presence is easily detected by small nodules, in which the females are lodged. By cutting one of these galls one may detect, with the aid of a magnifying glass, pear shaped corpuscles embedded in the tissue of the gall, undistinguishable by their colour, yet, nevertheless, easily observed owing to their polished and glossy surface. Each of these corpuscles gives shelter to a worm, which is much swollen by the eggs it contains. The nature of this insect makes its destruction particularly difficult, if not almost impossible; its great faculty of adaptation makes starving it out of the question, since, so far, there is no known plant on which it cannot get a living. There is authority for saying, however, that immersing the affected roots in water for twenty-four hours is sufficient to destroy all the non-encysted insects. Such treatment is neither costly nor difficult.

“VEGETABLE PARASITES.—A microscopic fungus of the *Oidium* group is destructive to Clematises. This fungus, commonly known as the ‘white,’ is similar to that which is observable in many other plants, Oaks, Rose bushes, and Peach trees. The only remedy here is the preventive one of applying sulphur; but if this treatment has not been applied soon enough to check the disease effectively, recourse must then be had to applying a solution of $\frac{1}{4}$ oz. copper sulphate, $\frac{3}{4}$ oz. of carbonate of soda, $1\frac{3}{4}$ pint water. If, in spite of these remedial measures, the plants are still attacked, it will then be necessary, in the autumn and before the plants

are completely withered, to carefully collect all contaminated leaves and twigs and burn them.

“The most deadly disease of Clematises is bacterian in its nature, which means that the disease is caused by a microbe through the tissues of the plant; and, unfortunately, the infection commences so insidiously that one only perceives its presence when too late. Without any perceptible trace of disease of animal or vegetable origin, and in soil which appears well suited for the culture of these plants, and at a time when they are in full leaf, and sometimes full bloom, they are all at once stricken with rapid decline, the flowers and leaves fade, the stems dry up, and the plant dies in spite of every care that may be bestowed on it. It is the prettiest kinds, such as *C. patens* and *C. lanuginosa*, that are the most often attacked in this way. The plants are also the more susceptible as they are younger, or more herbaceous in texture, which implies that the woodier species are much less liable to attack. The only surface symptom consists in the blackening of the base of the stems, just above the soil. Underneath, the blackened epiderm and the zone, where the sap circulates, undergo decomposition, with the natural consequence of the sudden death of the plant. Our own researches and constant practice in the culture of Clematises lead us to think that some of the maladies described above were consecutive to one another. It is not impossible to suppose that the presence of nematodes on the roots, by bringing about a constitutional weakness in the plant, is preparing, so to speak, a favourable field either for bacterian infection or for the propagation of fungi.

On the same principle, probably one of those two diseases would gain a footing by means of the decomposition or the decay brought about by another. Whatever it is, we can affirm that, by taking preventive measures, it is possible to keep Clematises free from the diseases to which they are liable. There need be no scruple, even as regards the youngest plant, about applying repeated dressings of sulphur, and these precautions will be completed by applications of Bordeaux mixture. A pinch of sulphur thrown at the foot of a plant after it has begun to grow, and renewed at intervals, is efficacious as a preservative from disease. The soils used in making the compost should be free from all organic matter undergoing moist decomposition or rot. The leaf-mould, also, must be free from any suspicion of having been used at any time for potatoes, beet, or any other vegetable which is capable of harbouring bacteria."

CLEMATIS

LIST OF KNOWN WILD SPECIES AND SOME OF THEIR FORMS.

- Acutangula*. China and India.
æthusifolia. China.
 „ var. *latisecta*.
alpina. N. Europe.
 „ var. *alba*.
 „ „ *cærulea*.
apiifolia. China and Japan.
Armandi. China.
Bergeroni. A garden hybrid (between *integrifolia* and *Viticella*).
brevicaudata. Manchuria (doubtful if in cult).
calycina (Syn. *balearica*). Balearic Isles.
campaniflora. Portugal.
chrysocoma. Yunnan.
cirrhusa (Syn. *balearica*). Balearic Isles.
coccinea. Texas.
connata. Himalaya and China.
crispa. E. United States.
Davidiana. China.
diversifolia. Origin doubtful.
Douglasii. W. United States.
Durandii (a hybrid between *integrifolia* and *lanuginosa*).
 „ var. *pallida*.
Flammula. Europe.
 „ var. *rubro-marginata*.
florida. Japan.
Fortunei. Japan.

- Fremontii*. Central United States.
fusca. N.E. Asia.
Gauriana. N. India.
globosa. Garden hybrid.
grata. Himalaya (said to be a hybrid).
Hendersonii (*integrifolia* and *Viticella*).
heracleæfolia. China.
integrifolia. S. Europe.
intermedia. Garden hybrid.
Jackmannii (a hybrid between *lanuginosa* and *Viticella*).
Jouiniana (a hybrid between *Davidiana* and *Vitalba*).
jubata. Origin?
lanuginosa. China.
ligusticifolia. W. United States.
montana. Himalaya.
 „ *rubens*. China.
 „ *Wilsoni*. China.
nutans. Himalaya and China.
ochroleuca. N. America.
orientalis. Orient.
paniculata. Japan.
patens. China and Japan.
Pitcheri. Colorado.
 „ var. *lasiostylis*.
 „ var. *Sargentii*.
Pseudo-flammula. Caucasus.
recta (Syn. *erecta*). S. Europe.
 „ var. *mandschurica*. Manchuria.
repens. China.
Scottii. N.W. United States.
Sieboldii. Japan.
Songarica. N.E. Asia.
stans. Japan.
tangutica. Central Asia.
uncinata. China.
vernalis (a hybrid between *ochroleuca* and *Scottii*).
Verticillaris. N. America.
Viorna. E. United States.
Virginiana. E. United States.
Vitalba. Europe.
 „ var. *syriaca*.

- Viticella*. Europe.
,, var. *grandiflora*.
,, ,, *nana*.
,, ,, *alba*.
Wilfordii. Korea.

Note.—As some of the vast regions in which these plants are wild are not yet fully explored, we may hope for important additions to the list.

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